In college Coxe had studied not only Greek and Latin but also Sanskrit, the classical language of India, and Birch had hired him with the (mistaken) idea that this knowledge might prove useful in helping to decipher the cuneiform tablets. Coxe had begun to learn Akkadian after joining the museum's staff, but both he and Birch deferred in practice to the dominant figure in British cuneiform studies, the formidable Sir Henry Creswicke Rawlinson. Not a museum employee, Rawlinson was a frequent presence in the department's workroom. Haughty, ambitious, and accustomed to command, Rawlinson had been knighted after a distinguished military career in India, Persia, and Iraq. He became a member of Parliament, ambassador, and director of the East India Company, then was appointed to the government's powerful Council on India. When he could spare time from his official duties he was often at the museum preparing a pioneering series of publications of cuneiform inscriptions. An odd avocation, perhaps, for a politician and military man, but Rawlinson had a genuine passion for ancient languages. He saw too that he could make a name for himself as a pioneer in this new field of study, an arena in which he could establish an unrivaled sway.

It was Rawlinson who had made the decisive breakthrough in the decipherment of cuneiform writing, thanks to an exceptional combination of insight and sheer physical daring. As a young lieutenant in India and Persia, he had become famous for feats of strength and endurance, making great journeys on horseback in record time, such as a ride of 750 miles within 150 consecutive hours. His two sons inherited his prowess, and both of them joined the army as well. Rising to the rank of general, the elder son achieved a major victory in World War I when he broke the Hindenburg Line along the western front. Somewhat less gloriously, the younger son was

known in sporting circles as "the best polo player in India." Their father, however, was distinguished by his intellectual passion as much as by his athleticism, rapidly learning Eastern languages during his tours of duty and making himself welcome at the Persian court with his ability to recite long passages of Persian poetry from memory.

While in Persia, where he helped reorganize the shah's army, Rawlinson visited the ancient ruins at Behistun in the mountains of western Persia. With his talent for languages, the young officer was intrigued by the mysterious cuneiform writing that the early Persians had borrowed from neighboring Mesopotamia. The intricate wedge-shaped marks seemed to be completely unreadable. A German high school teacher named Grotefend, working in the quiet college town of Göttingen, had proposed some tentative readings in 1802, but his ideas had not been widely noted and were unknown in England. Rawlinson, however, learned of a trilingual inscription on a monument to the Persian king Darius the Great. A decade earlier, the Frenchman Jean-François Champollion had deciphered the Egyptian Rosetta stone, also a trilingual text, written in Greek and in two forms of Egyptian hieroglyphics. By identifying names in both languages, Champollion had been able to reconstruct the sounds of many of the hieroglyphs: working back from the Greek, which he could read, he gradually began to reconstruct the Egyptian text and its grammar, and published his translation to great acclaim in 1824.

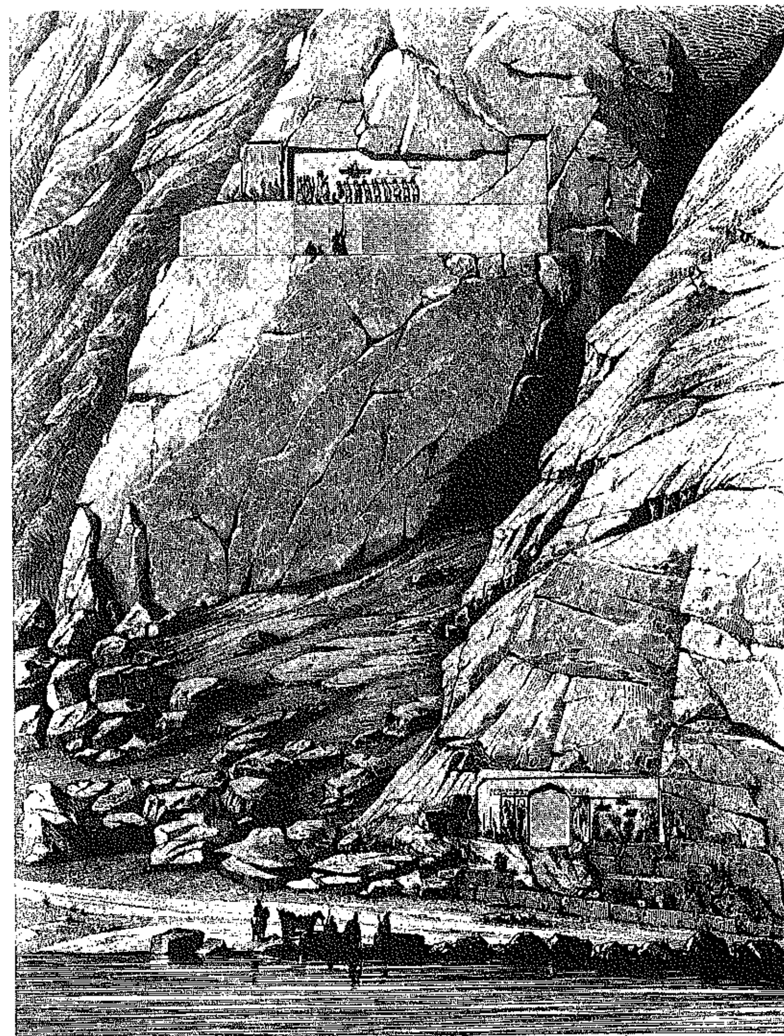
Rawlinson realized that a similar feat might be accomplished with Darius's inscription, but first it would have to be copied for careful study. This presented a further difficulty: the inscription was all but unreachable, carved on a cliff three hundred feet above the valley floor. The site featured

monumental reliefs of Darius receiving tribute from subject kings, but the accompanying inscriptions had been addressed to the gods rather than to mortals, and they couldn't be read from the ground far below. The only access to the carvings, after a harrowing climb up an almost sheer rock face, was a narrow, crumbling ledge.

Undeterred, Rawlinson made the climb with a few equally bold friends and copied what he could. On subsequent trips, they took along a ladder, and with this Rawlinson was able to reach more of the inscriptions. He described his method some years later, in the understated style favored by Victorian explorers when recounting particularly hair-raising adventures. "Even with ladders there is considerable risk," he wrote,

> for the foot-ledge is so narrow, about 18 inches, or at most 2 feet in breadth, that . . . the upper inscriptions can only be copied by standing on the topmost step of the ladder, with no other support than steadying the body against the rock with the left arm, while the left hand holds the note-book and the right hand is employed with the pencil. In this position I copied all the upper inscriptions and the interest of the occupation entirely did away with any sense of danger.

New dangers appeared farther along the ledge where the path had broken away. Rawlinson tried to bridge the gap by laying his ladder across it, but at the far side of the break the edge curved and only one of the ladder's sides could hold; the other side hung down. Rawlinson then began inching across



Monumental relief of Darius the Great at Behistun. Two tribesmen are perched on the ledge where Rawlinson precariously worked.

the gap, holding on to the secure side of the ladder and setting his feet on the lower side between the ladder's rungs. But it turned out that the rungs weren't firmly fastened. When Rawlinson was partway across,

> the vertical pressure forced the bars out of their sockets, and the lower and unsupported side of the ladder thus parted company from the upper, and went crashing down over the precipice. Hanging on to the upper side, which still remained firm in its place, and assisted by my friends, who were anxiously watching the trial, I regained the Persian recess, and did not again attempt to cross until I had made a bridge of comparative stability.

Farther along, the resourceful Rawlinson was stymied by a looming overhang, and so he resorted to a classic imperial move: he delegated the job to a native. No local tribesman would agree to risk his life for the sake of scholarship, but "a wild Kurdish boy, who had come from a distance, volunteered to make the attempt, and I promised him a considerable reward if he succeeded." (The price of failure, apparently, was not discussed.) The boy squeezed himself up a cleft alongside the overhang, then inched across the cliff "by hanging on with his toes and fingers to the slight inequalities on the bare face of the precipice, and in this he succeeded, passing over a distance of twenty feet of almost smooth perpendicular rock in a manner which to a looker-on appeared quite miraculous." Once in position, the boy made a paper pressing of the desired passage.

Rawlinson slowly began to make sense of the inscription during the next several years, though he had to interrupt his work to serve in the Afghan Wars of 1838–42. Appointed British Resident in Baghdad in 1843, he pursued his researches in the time he could spare from his diplomatic activities, in

which elaborate dinner parties figured prominently; his large staff included specialists in coffee brewing and the tending of water pipes. In time, a small group of scholars around Europe began to build on his work. By the early 1860s they had penetrated the mysteries of the world's oldest script and had achieved a working understanding of Akkadian, the language most commonly used in the cuneiform tablets.

Their task was much harder than the daunting challenge Champollion had faced. The pictorial quality of Egyptian hieroglyphs meant that at least some signs showed clearly what they meant, whereas the cuneiform symbols were all highly abstract. Even when the symbols once represented something concrete, the visual reference had been obscured over time. A head could be represented by two upright wedges that had once been the neck, topped by a cluster of wedges that distantly recalled an eye, nose, and head of hair. A triangular sign might have originally signified a basket or a vagina. Even when a sign's visual origin could be guessed, this information was rarely useful, as the signs were usually used for their phonetic value rather than as pictures.

Furthermore, while one of the Rosetta stone's parallel inscriptions had been in ancient Greek—which Champollion could readily read—all three inscriptions from Behistun were in cuneiform script. Rawlinson was faced with a choice of enigmas. Fortunately, one of the three was a simple script used for Old Persian, with only thirty-six characters, and Rawlinson knew two early Persian languages. He shrewdly guessed that the monumental reliefs portrayed the dominant ancient Persian king Darius the Great, together with a line of captive or subordinate kings, and by a process of trial and error began to derive the sound values for many of the names on

the monument, along with formulaic phrases such as "king of kings."

Fortunately, the sound values of the three dozen Old Persian characters held good for the Akkadian text, though it had hundreds of different characters and so posed a far more difficult challenge. It took fifteen years of steady work before Rawlinson could declare, in 1850, that he had deciphered most of the inscription. In this task, he was greatly aided by Akkadian's close relationship to Hebrew; "chariot," for example, is *merkhabah* in Hebrew, *narkabtum* in Akkadian; "woman" is *iššah* in Hebrew, *aššatum* in Akkadian.

Such commonalities provided a crucial doorway into the language, but the task of decipherment was complicated by the intricacy of the Akkadian cuneiform system. Rawlinson gradually realized that the Akkadian system must represent sounds, as it had only six hundred different characters, far too few for each sign to represent a discrete object. Since six hundred characters were far more than would be needed for an alphabet, Rawlinson concluded they must represent syllables.

So they often did, though a character could also be used for an entire word. The star symbol, ✳, pronounced *an*, could represent Anu, god of the sky, yet it could also be the first syllable of the pronoun *annûtim*, "these," among many other words. (Like many ancient writers, the Mesopotamian scribes didn't bother to leave spaces between words, so it was always a challenge to decide where a word might begin and end.) Moreover, a symbol could be used for more than one sound, much as in English the letter *c* can have the sound *s* or *k*. On the other hand, one sound could be represented by several different characters, much as the letters *k*, *q*, and sometimes *c* can all represent the same sound, but cuneiform

developed with many more complications than are found in simple alphabets. Finally, the individual signs often changed in form from one region to another and from one era to the next during the three thousand years of the script's use. One sign, to take a typical example, was originally written [cuneiform sign] in Babylonia and was often pronounced *ni* or *ne*; but it could also be written as a more open triangle in the form [cuneiform sign] or [cuneiform sign] and it could be written more simply as [cuneiform sign]; in Assyria, it was written [cuneiform sign], with the uppermost wedge set horizontally instead of slanting down. In any of its forms, the sign could convey a variety of sounds: not only *ni* and *ne*, but also *i*, *il*, and *shu*.

Rawlinson spent years making lists and charts of signs, looking for patterns that might suggest grammatical elements such as pronouns or verb endings. Since the Assyrians had extensive dealings with the peoples of Palestine, the royal inscriptions provided many names known from the Bible, whose representation in Akkadian could be worked out. Rawlinson and his fellow researchers painstakingly built up their knowledge, using known characters in one name to guess at unknown characters in another name that had some overlap with the first. A typical progression can be seen in the following selections from a chart in Austen Henry Layard's *Discoveries in the Ruins of Nineveh and Babylon*, which gives a series of Hebrew names and their cuneiform rendering:

NAME	CUNEIFORM	HEBREW
Jehu..	[cuneiform signs]	יֵהוּא
Judæa	[cuneiform signs]	יְהוּדָה
Dagon	[cuneiform signs]	דָּגוֹן

Once the decipherer had arrived at the first name, Jehu ("ye-hu" in Hebrew, "ie-u" in Akkadian), it was possible to guess at the unknown character in the next name, "ie-u- -a," and arrive at "ie-u-da-a" or Judea. Having determined the sound of the *da* character, the linguist was halfway to unraveling the name of the god Dagon. It must have taken Rawlinson thousands of trial-and-error attempts to build up a reasonable certainty for at least the most common characters.

Another major complication in the process of decipherment was that cuneiform had originally been developed in southern Mesopotamia by people who spoke Sumerian, an ancient language completely unrelated to any other known language. The script had then been taken over by speakers of Akkadian, which became the most commonly written language for much of Mesopotamian history. Yet the Akkadian scribes continued to learn Sumerian as they mastered the script, and they often employed Sumerian loan words amid their Akkadian texts. It is as though, in reading an English text, we would often have to pause and determine whether *pain* meant "suffering," as in English, or "bread," as in French.

Conversely, a sign might have the same meaning in Akkadian as in Sumerian but a completely different sound: when used to mean "sky," the star symbol is pronounced *an* in Sumerian, but is *shamû* in Akkadian. Names in particular could be tricky, for Assyrian names often included Sumerian elements, along with Akkadian symbols. This would lead George Smith, for example, to misread the name Gilgamesh as "Izdubar"; he didn't realize that what looked like two Akkadian characters, *iz* and *du,* were actually Sumerian signs pronounced "giš-ga" or "gil-ga." He then guessed incorrectly on the final syllable,

which was Akkadian as he assumed, but which can be pronounced either "bar" or "mesh." So "gil-ga-mesh" became "Izdubar," among other renderings by different Assyriologists of the day. The reading of "Gilgamesh" was finally established twenty-five years later by Smith's friend and successor Theophilus G. Pinches, in an article triumphantly entitled *"EXIT GIŠTUBAR!"*

Rawlinson had begun studying the Behistun inscriptions in 1835, and by the late 1850s his reputation was firmly established as the world's leading authority on cuneiform. Yet he realized there was much he didn't know. He had long hoarded his transcriptions—and often borrowed without acknowledgment from rivals such as the Irish priest Edward Hincks—but now he decided to publish a set of oversized volumes that would offer clear and accurate texts for other researchers to use. Rawlinson was engaged off and on with this labor of love for many years, up through the publication of the fifth and final volume in 1884; fifty years of age in 1860, he had just published the first volume of *Cuneiform Inscriptions of Western Asia* when George Smith began to frequent the museum.

At first, Dr. Birch and "Coxe of Balliol" paid little attention to the quiet but persistent young engraver who kept coming to examine tablets. The British Museum was open to the public only three days a week, and the trustees had been reluctant to allow that much access, protesting that crowds of uneducated laborers could damage the artworks, which should be reserved for study by art students and appreciation by a refined clientele (who could be admitted on the other